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The advantages of the invention are numerous. Several advantages that embodiments of the invention may include are as follows. One of the advantages is an economical and efficient 3D modeling system that is low in cost and easy to operate, virtually anywhere within minutes. The modeling system employing the present invention can be used and operated by an ordinary skilled person to generate fully-textured models of 3D objects within a limited time for many applications including Internet commerce and product designs. Another advantage is the MAE scheme that encodes all mask images to make the space carving process nearly independent of the size of images. Still another advantage is the process of generating a mesh model using neighborhood configuration that produces only valid triangles. Still another advantage is the texture mapping process that provides a mechanism to generate exportable patches comprising triangles that can be provided contiguous texture mapping without user intervention. Yet another advantage is the possible implementation of the texture mapping processing on graphics accelerator architecture to redirect the graphics accelerator to draw into a buffer in memory rather than the buffer for a monitor, yielding a much more efficient mapping of the textures.

#### In the Claims

Please amend Claims 1, 6-7, 18, and 23-24 as follows:

- Sub  
C1  
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1. (Amended) A method for automatically generating a fully-textured 3D model of an object, said method comprising:
- receiving from a camera a sequence of images taken sequentially and respectively around the object;
  - generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a specific plane;
  - generating a mesh model from said 3D region using a tree structure; and
  - producing said fully-textured 3D model from said mesh model with respect to said sequence of images.

Sub D4  
a11

6. (Amended) The method as recited in claim 5, wherein each of said cubes is encoded as a node in said tree structure that grows, while said carving said cubes recursively proceeds, till a predefined degree of refinement.

7. (Amended) The method as recited in claim 6; wherein said generating a mesh model comprises:

collecting all leaves of said tree structure by traversing said tree structure,  
determining boundary cubes from said leaves; and  
triangulating a group of at least three of said boundary cubes according to predefined rules.

Sub C2  
a12

18. (Amended) A computer readable medium for storing computer program instructions for automatically generating a fully-textured 3D model of an object, said computer readable medium comprising:

first program code for receiving from a camera a sequence of images taken sequentially and respectively around the object;  
second program code for generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a specific plane;  
third program code for generating a mesh model from said 3D region using a tree structure; and  
fourth program code for producing said fully-textured 3D model from said mesh model with respect to said sequence of images.

Sub D8  
a13

23. (Amended) The computer readable medium as recited in claim 22, wherein each of said cubes is encoded as a node in said tree structure that grows till a predefined degree of refinement.

24. (Amended) The computer readable medium as recited in claim 23, wherein said third program code comprises:

program code for collecting all leaves of said tree structure by traversing said tree structure,